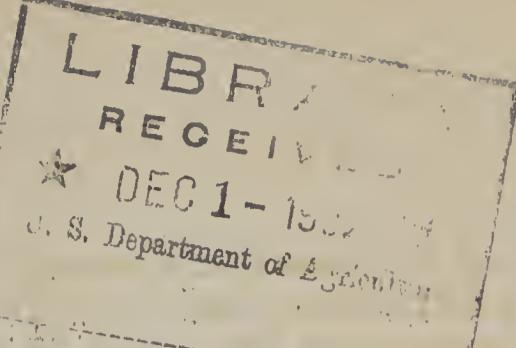


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THE GARDEN CALENDAR

A radio talk by W. R. Beattie, Bureau of Plant Industry, delivered in the Department of Agriculture period of the National Farm and Home Hour, broadcast by a network of 48 associate NBC radio stations, Tuesday, November 8, 1932.

In the Garden Calendar period last Tuesday, I told you about the plant breeders, and how they are developing strains and varieties of cultivated crops that defy the attacks of the various diseases. In some cases, plant diseases destroy the crops in the field. In other cases, the diseases make a start in the field, but continue to develop in the storage house, on the way to market, or even after the products reach the market.

The case of the watermelon stem-end-rot illustrates my point very nicely. Years ago, whole carloads of watermelons shipped from south Georgia and other southeastern shipping centers, had to be dumped when they reached the northern markets, because this disease had made such headway that they were not saleable. The Department scientists turned watermelon growers for a year or two until they found that the organisms that cause this disease entered perfectly healthy watermelons through the stems. Even the knives used for cutting the melons from the vines are carriers of the disease from infected to healthy melons.

When the disease organisms once enter the cut portions of the watermelon stem they grow rapidly, and in the course of a day or two, extend through the stem into the flesh of the melon, and decay soon follows. Even a speck of infected soil getting into the cut stem, or any small cut or puncture of the skin of the melon starts the disease. You watermelon growers of the southeast are familiar with the remedy that the scientists worked out to check this great loss. The remedy is very simple. First, the melon cutters are instructed to cut the melons with as long stems as possible, and to avoid contaminating their knives by cutting into diseased melons. Care is also taken to see that the cut stems of the melons do not touch the ground. The melons are piled in the car with their stem ends toward the center of the car, and as fast as a layer is placed, the loader clips an inch or so from every stem, using a razor blade or a very sharp knife so as to make a smooth cut. Next he paints each and every cut stem with a special paste containing bluestone, and this forms a protective coating that the stem-end-rot disease organisms cannot penetrate. If the melons are handled carefully, and there are no cuts or bruises on them, and the stems treated they will go to market without loss from stem-end-rot.

The workers of the Department found that insect and disease control in the apple orchards of the northwest are the first and most essential steps in getting our apples onto the European markets in good condition. The second step is to provide the proper temperature and ventilation conditions on shipboard during transit. They found also that the apples are injured if they're allowed to remain piled on the docks for any length of time before being loaded into the refrigerated cargo space on shipboard.

The United States Department of Agriculture workers have made test shipments, following apples and pears from Pacific Northwest orchards to the docks,
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and accompanied them all the way to European markets. Our men made temperature, ventilation, and humidity observations on the way, and the results of their observations are going to be valuable to the growers, the exporters, and the ship companies, to say nothing of giving our fruit a better reputation in foreign markets.

As a requirement for successful marketing, we must produce fruits of high quality and appearance. Worm-infested and scabby fruits have had their day, and we're no longer content with poor products either for home use or for marketing. Insect and disease troubles are being overcome, first, by breeding resistant varieties, and, second, by better control methods. Some of the discoveries made by scientists in recent years have completely upset old traditions and beliefs.

As an example, take the recent studies of the relation of the foliage that the trees carry to the production of fruits and nuts. You have often heard it said that "the leaves are the lungs of the plants." They're more than that. The leaves are both the lungs and the digestive system of the tree or plant. It is in the leaves that the raw materials from the soil and the air are converted into the fruits or nuts, and the woody tissues of the plants. If the plants or trees do not bear a sufficient number of healthy leaves, they simply can't produce a good crop of fruit or nuts.

Our workers find in the case of apples and pears that where only ten well-developed leaves are present for each fruit, you'll get small, poorly-colored fruit. With 20 leaves per fruit you get fair-sized and colored fruits, but for best results, you need from 30 to 40 good, healthy leaves for each apple or pear on the tree. Any injury to your trees, such as that caused by drought, insect attacks, leaf diseases, or the loss of the leaves during the growing season, will affect your fruit. The loss of the leaves is also very liable to result in failure of your trees to set a crop the next season. We've found that in cases of severe drought, the leaves of our fruit trees almost cease to function, and in that case the fruit stops growing. Trees, like animals, must be healthy, and well fed and watered if you want them to do good work.